Amendment to the Claims

1. (original) A method of estimating the measuring accuracy of each of a plurality of dispensing meters which dispense fluid from a fluid dispensing system including a storage tank, comprising:

measuring a volume of fluid dispensed through each of the plurality of dispensing meters during a plurality of time intervals during which fluid is simultaneously dispensed through the plurality of dispensing meters;

A2 Cont.

measuring a volume of fluid dispensed from the storage tank during each of the plurality of time intervals; and

calculating a fraction of the volume of fluid dispensed through each of the dispensing meters by performing a regression analysis with respect to the measured volume of fluid dispensed from the storage tank equated with a fraction of a sum of the measured volumes of fluid dispensed through the plurality of dispensing meters during each of the plurality of time intervals, the fraction of the sum of the measured volumes of fluid dispensed through the plurality of dispensing meters being the sum of the fractions of the measured volumes of fluid dispensed through each of the dispensing meters on average over the plurality of time intervals.

2. (original) The method of claim 1 wherein the regression analysis includes a least squares regression.

3. (original) The method of claim 1 wherein the volume of fluid dispensed from the storage tank is measured by measuring the height of the fluid in the storage tank.

4. (original) The method of claim 1 wherein the regression analysis is performed by treating the sum of the measured volumes of fluid dispensed through the plurality of dispensing meters as independent variables.

5. (original) The method of claim 1 further comprising

identifying leakage from the fluid dispensing system.

6. (original) The method of claim 1 further comprising

accurately measuring performance of a vapor recovery system of the fluid storage system by comparing an amount of fluid recovered from vapor against an actual amount of fluid dispensed through the dispensing meters.

7. (original) An apparatus for estimating measuring accuracy for a fluid dispensing system including a storage tank, comprising:

a plurality of dispensing meters which dispense fluid from the fluid dispensing system and which measure a volume of fluid dispensed through each of the plurality of dispensing meters during a plurality of time intervals during which fluid is simultaneously dispensed through the plurality of dispensing meters;

a gauge for measuring a volume of fluid dispensed from the storage tank during each of the plurality of time intervals; and

a processor for collecting data indicative of the volumes of fluid measured by the plurality of dispensing meters and the gauge and for calculating a fraction of the volume of fluid dispensed through each of the dispensing meters by performing a regression analysis with respect to the measured volume of fluid dispensed from the storage tank equated with a fraction of a sum of the

measured volumes of fluid dispensed through the plurality of dispensing meters during each of the plurality of time intervals, the fraction of the sum of the measured volumes of fluid dispensed through the plurality of dispensing meters being the sum of the fractions of the measured volumes of fluid dispensed through each of the dispensing meters on average over the plurality of time intervals.

8. (original) A method of determining a rate of leakage for fluid leaking from a fluid dispensing system, which includes either one or a plurality of dispensing meters for dispensing fluid and a storage tank, the method comprising:

measuring a volume of fluid dispensed through the dispensing meter during a plurality of time intervals each having an elapsed time;

measuring a volume of fluid dispensed from the storage tank during the elapsed time of each of the plurality of time intervals; and

calculating a rate of leakage for fluid leaking from the fluid dispensing system by performing a regression analysis with respect to the measured volume of fluid dispensed from the storage tank equated with a fraction of a sum of the measured volume of fluid dispensed through the dispensing meter and the elapsed time during each of the plurality of time intervals, the fraction of the sum of the measured volume of fluid dispensed through the dispensing meter and the elapsed time being the sum of a fraction of the measured volume of fluid dispensed through the dispensing meter and the rate of leakage multiplied by the elapsed time on average over the plurality of time intervals.

9. (original) The method of claim 8 further comprising

estimating the measuring accuracy of each of the dispensing meters by calculating the fraction of the measured volume of fluid dispensed through each of the dispensing meters.

10. (original) The method of claim 8 further comprising

measuring a volume of fluid dispensed through each of a plurality of dispensing meters during the plurality of time intervals; and

performing the regression analysis with respect to the measured volumes of fluid dispensed through each of the dispensing meters.

11. (original) The method of claim 8 wherein each of the plurality of time intervals occurs when no fluid is being dispensed from the fluid dispensing system.

12. (original) The method of claim 8 wherein the fluid storage system further includes a fluid line connecting the storage tank and the dispensing meter, and the rate of leakage includes a rate of leakage from the storage tank and a rate of leakage from the fluid line.

13. (original) The method of claim 12 further comprising

determining the rate of leakage from the fluid line by the regression analysis.

14. (original) The method of claim 11 wherein each of the plurality of time intervals occurs when there is fluid in the fluid line and no product is being dispensed.

15. (original) The method of claim 11 wherein each of the plurality of time intervals occurs when there is no fluid in the fluid line.

16. (currently amended) A method of obtaining inventory information for a fluid storage system including a metering device for measuring a quantity of fluid dispensed by the

metering device and a storage tank having a gauge for measuring a height ~~volume~~ of fluid in the storage tank, the method comprising:

collecting a plurality of measurement data from the metering device and the gauge over a plurality of time intervals;

transmitting the plurality of measurement data over a network to a location remote from the fluid storage system;

storing the plurality of measurement data at the remote location;

determining a mathematical relationship between a volume of fluid in the storage tank and the height of fluid in the storage tank; and

performing a statistical analysis of the stored plurality of measurement data including the mathematical relationship to obtain inventory information for the fluid storage system.

17. (original) The method of claim 16 wherein the plurality of measurement data is transmitted automatically at predetermined intervals.

18. (original) The method of claim 16 wherein the measurement data stored at the remote location is stored in a database.

19. (original) The method of claim 16 further comprising transmitting results of the statistical analysis to the fluid storage system.

20. (original) The method of claim 16 further comprising determining whether there is a leak in the fluid storage system.

21. (currently amended) The method of claim 16~~15~~ further comprising accurately measuring performance of a vapor recovery system for the fluid storage system by comparing an

amount of fluid recovered from vapor against an actual amount of fluid dispensed through the dispensing meters.

22. (new) The method of claim 16 wherein the fluid storage system is a manifolded system.